Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical element of an optical pickup device for reproducing and/or recording information on a first optical information recording medium having a protect substrate thickness t1 by using a light beam having a first wavelength λ1 emitted from a first light source, and ~~on~~ for reproducing and/or recording information ~~for~~ on a second optical information recording medium having a protect substrate thickness t2 (t2≥t1) by using a light beam having a second wavelength λ2 (λ2>λ1) emitted from a second light source, comprising:

a diffractive structure having a plurality of diffracting ring-shaped zones arranged around an optical axis on at least one optical surface; and

an optical path difference giving structure arranged on an optical surface of at least one of the plurality of diffracting ring-shaped zones, for giving a prescribed optical path difference to a prescribed light beam passing through the diffracting ring-shaped zone,

wherein the diffractive structure is a structure having a diffracting function for setting L-th (L≠0) order diffracted light of the light beam having the first wavelength λ1 to a maximum diffraction efficiency and for setting M-th (M≠0) order diffracted light of the light beam having the second wavelength λ2 to a maximum diffraction efficiency if the optical path difference giving structure does not exist on the optical surface of the diffractive structure.

2. (Previously Presented) The optical element of claim 1, wherein as compared with the diffractive structure when the optical path difference giving structure is not provided on the optical surface of the diffractive structure, the optical path difference giving structure lowers an absolute value of an optical phase difference between the L-th order diffracted light of the light beam having the first wavelength λ1 and the M-th order diffracted light of the light beam having the second wavelength λ2 by changing a phase of at least one of the L-th order diffracted light of the light beam having the first wavelength λ1 and the M-th order diffracted light of the light beam having the second wavelength λ2, the L-th order diffracted light and the M-th order diffracted light being caused by the structure having the diffracting function.

3. (Previously Presented) The optical element of claim 1, wherein as compared with the diffractive structure when the optical path difference giving structure is not provided on the optical surface of the diffractive structure, the optical path difference giving structure lowers an absolute value of an optical phase difference between the L-th order diffracted light of the light beam having the first wavelength λ1 and the M-th order diffracted light of the light beam having the second wavelength λ2 by substantially giving no change of a phase of one of the L-th order diffracted light of the light beam having the first wavelength λ1 and the M-th order diffracted light of the light beam having the second wavelength λ2 and by giving a phase difference to the other of the L-th order diffracted light of the light beam having the first wavelength λ1 and the M-th order diffracted light having the light beam having the second wavelength λ2, the L-th order diffracted light and the M-th order diffracted light being caused by the structure having the diffracting function.

4. (Previously Presented) The optical element of claim 1, wherein as compared with the diffractive structure when the optical path difference giving structure is not provided on the optical surface of the diffractive structure, the optical path difference giving structure lowers an absolute value of an optical phase difference between the L-th order diffracted light of the light beam having the first wavelength $\lambda 1$ and the M-th order diffracted light of the light beam having the second wavelength $\lambda 2$ by giving a phase difference to both the L-th order diffracted light of the light beam having the first wavelength $\lambda 1$ and the M-th order diffracted light of the light beam having the second wavelength $\lambda 2$, the L-th order diffracted light and the M-th order diffracted light being caused by the structure having the diffracting function.

5. (Previously Presented) The optical element of claim 1, wherein as compared with the diffractive structure when the optical path difference giving structure is not provided on the optical surface of the diffractive structure, the optical path difference giving structure lowers an absolute value of an optical phase difference between the L-th order diffracted light of the light beam having the first wavelength $\lambda 1$ and the M-th order diffracted light of the light beam having the second wavelength $\lambda 2$ by giving an optical path difference approximately equal to an integral multiple having the first wavelength $\lambda 1$ to the L-th order diffracted light of the light beam having the first wavelength $\lambda 1$ to substantially give no change of a phase difference generated by the diffractive structure and by giving an optical path difference not equal to an integral multiple having the second wavelength $\lambda 2$ to the M-th order diffracted light of the light beam having the second wavelength $\lambda 2$.

6. (Previously Presented) The optical element of claim 1, wherein the optical path difference giving structure sets the absolute value of the optical phase difference to a value lower than 0.6 π radians.

7. (Previously Presented) The optical element of claim 1, wherein the structure having the diffracting function has a discontinuous surface formed in a serrate shape, and the optical path difference giving structure has a discontinuous surface formed in a stepped shape along a direction of the optical axis.

8. (Previously Presented) The optical element of claim 1, wherein the structure having the diffracting function has a discontinuous surface formed in a stepped shape along a direction of the optical axis, and the optical path difference giving structure has a discontinuous surface formed in a stepped shape along the direction of the optical axis.

9. (Previously Presented) The optical element of claim 1, wherein the optical surface comprises a central region arranged around the optical axis and formed in an approximately circular shape, and a peripheral region arranged at a periphery of the central region, the structure having the diffracting function and the optical path difference giving structure are provided in the central region, and the diffractive structure formed in a serrate shape is provided in the peripheral region.

10. (Previously Presented) The optical element of claim 1, wherein the optical surface comprises a central region arranged around the optical axis and formed in an approximately

circular shape, and a peripheral region arranged at a periphery of the central region, the structure having the diffracting function and the optical path difference giving structure are provided in the central region, and the optical path difference giving structure is provided in the peripheral region.

11. (Previously Presented) The optical element of claim 1, wherein the optical surface comprises a central region arranged around the optical axis and formed in an approximately circular shape, and a peripheral region arranged at a periphery of the central region, the structure having the diffracting function and the optical path difference giving structure are provided in the central region, and a refractive structure for refracting a light beam is arranged in the peripheral region.

12. (Previously Presented) The optical element of claim 1, wherein L=M is satisfied.

13. (Previously Presented) The optical element of claim 1, wherein L=M=1 is satisfied.

14. (Previously Presented) The optical element of claim 7, wherein the number of the discontinuous surfaces which are formed in a stepped shape along a direction of the optical axis and composes the optical path difference giving structure, is 2 or 3.

15. (Previously Presented) The optical element of claim 1, wherein the first wavelength $\lambda 1$ satisfies:

370 nm $\leq \lambda 1 \leq$ 430 nm, and

the second wavelength $\lambda 2$ satisfies:

620 nm $\leq \lambda 2 \leq$ 680 nm.

16. (Previously Presented) The optical element of claim 1, wherein the structure having the diffracting function sets a sum of a diffraction efficiency of the L-th order diffracted light of the light beam having the first wavelength $\lambda 1$ and a diffraction efficiency of the M-th order diffracted light of the light beam having the second wavelength $\lambda 2$ to 170% or less, and the optical path difference giving structure heightens the sum of the diffraction efficiency of the L-th order diffracted light of the light beam having the first wavelength $\lambda 1$ and the diffraction efficiency of the M-th order diffracted light of the light beam having the second wavelength $\lambda 2$ by 10% or more.

17. (Previously Presented) An objective optical element which is the optical element of claim 1, wherein the light beam having the first wavelength $\lambda 1$ and the light beam having the second wavelength $\lambda 2$ are respectively incident on the optical surface as a diverging light beam, and the light beam having the first wavelength $\lambda 1$ and the light beam having the second wavelength $\lambda 2$ are converged on a prescribed optical information recording medium in a condition that spherical aberration and/or wave front aberration are corrected.

18. (Previously Presented) The objective optical element of claim 17, wherein a magnification m of the objective optical element satisfies a formula:

$-0.295 \leq m \leq -0.049$.

19. (Previously Presented) The objective optical element of claim 17, wherein a curvature radius R1 of a paraxial region of an optical surface on a light source side and a curvature radius R2 of a paraxial region of an optical surface on the optical information recording medium side satisfies a formula:

$-3.2 < R2/R1 < -1.9$.

20. (Previously Presented) The optical element of claim 1, wherein the first wavelength $\lambda 1$ and the second wavelength $\lambda 2$ are a use reference wavelength.

21. (Previously Presented) An objective optical element which is the optical element of claim 20, wherein the optical path difference giving structure gives an optical path difference to the diffracted light so that a -N-th order diffracted light of the light beam having the use reference wavelength $\lambda 1$ has a maximum diffraction efficiency and so that a (-N+1)-th order diffracted light of the light beam having the use reference wavelength $\lambda 2$ or a (-N-1)-th order diffracted light of the light beam having the use reference wavelength $\lambda 2$ has a maximum diffraction efficiency.

22. (Previously Presented) The objective optical element of claim 21, wherein the optical surface of the diffracting ring-shaped zone has a structure substantially inclined with respect to the optical surface formed in a prescribed aspherical shape, the structure substantially inclined having a discontinuous surface formed in a serrate shape, and the optical path difference

giving structure has a discontinuous surface formed in a stepped shape along the direction of the optical axis.

23. (Previously Presented) The objective optical element of claim 21, wherein the optical surface of the diffracting ring-shaped zone has a structure substantially inclined with respect to the optical surface formed in a prescribed aspherical shape, the structure substantially inclined having a discontinuous surface formed in a stepped shape along the direction of the optical axis, and the optical path difference giving structure has a discontinuous surface formed in a stepped shape along the direction of the optical axis.

24. (Previously Presented) The objective optical element of claim 21, wherein the optical surface formed in the prescribed aspherical shape is partitioned into a central region arranged around the optical axis and formed in an approximately circular shape, and a peripheral region surrounding a periphery of the central region, the diffracting ring-shaped zones are arranged in the central region, and a diffracting ring-shaped zone formed in the serrate shape is arranged in the peripheral region.

25. (Previously Presented) The objective optical element of claim 21, wherein the optical surface formed in the prescribed aspherical shape is partitioned into a central region arranged around the optical axis and formed in an approximately circular shape, and a peripheral region surrounding a periphery of the central region, the diffracting ring-shaped zones are arranged in the central region, and the optical path difference giving structure is arranged in the peripheral region.

26. (Previously Presented) The objective optical element of claim 21, wherein the optical surface formed in the prescribed aspherical shape is partitioned into a central region arranged around the optical axis and formed in an approximately circular shape, and a peripheral region surrounding a periphery of the central region, the diffracting ring-shaped zones are arranged in the central region, and a refractive structure for reflecting the light beam is arranged in the peripheral region.

27. (Previously Presented) The objective optical element of claim 21, wherein the number of diffracting ring-shaped zones is from 3 to 20.

28. (Previously Presented) The objective optical element of claim 21, wherein the optical path difference giving structure gives an optical path difference equal to an integral multiple of the use reference wavelength $\lambda 2$ to the light beam having the use reference wavelength $\lambda 2$.

29. (Previously Presented) The objective optical element of claim 21, wherein L=M is satisfied.

30. (Previously Presented) The objective optical element of claim 21, wherein L=N is satisfied.

31. (Previously Presented) The objective optical element of claim 21, wherein M=N is satisfied.

32. (Previously Presented) The objective optical element of claim 21, wherein L=M=N is satisfied.

33. (Previously Presented) The objective optical element of claim 21, wherein the light beam having the use reference wavelength $\lambda 1$ and the light beam having the use reference wavelength $\lambda 2$ are respectively incident on the optical surface as a diverging light beam, and the light beam having the use reference wavelength $\lambda 1$ and the light beam having the use reference wavelength $\lambda 2$ are converged on a prescribed optical information recording medium in a condition that spherical aberration and/or wave front aberration are corrected.

34. (Previously Presented) The objective optical element of claim 21, wherein a magnification m of the objective optical element satisfies a formula:

$-0.295 \leq m \leq -0.049$.

35. (Previously Presented) The objective optical element of claim 21, wherein a curvature radius R1 of a paraxial region of an optical surface on a light source side and a curvature radius R2 of a paraxial region of an optical surface on the optical information recording medium side satisfies a formula:

$-3.2 < R2/R1 < -1.9$.

36. (Previously Presented) An optical pickup device for reproducing and/or recording information on a first optical information recording medium having a protect substrate thickness t1 by using a light beam having a first wavelength $\lambda 1$ emitted from a first light source, and for reproducing and/or recording information on a second optical information recording medium having a protect substrate thickness t2 ($t2 \geq t1$) by using a light beam having a second wavelength $\lambda 2$ ($\lambda 2 > \lambda 1$) emitted from a second light source, the optical pickup device comprising:

a plurality of optical elements;

wherein at least one of the optical elements comprises:

a diffractive structure having a plurality of diffracting ring-shaped zones arranged around an optical axis on at least an optical surface; and

an optical path difference giving structure arranged on an optical surface of at least one of the plurality of diffracting ring-shaped zones, for giving a prescribed optical path difference to a prescribed light beam passing through the diffracting ring-shaped zone,

wherein the diffractive structure is a structure having a diffracting function for setting L-th ($L \neq 0$) order diffracted light of the light beam having the first wavelength $\lambda 1$ to a maximum diffraction efficiency and for setting M-th ($M \neq 0$) order diffracted light of the light beam having the second wavelength $\lambda 2$ to a maximum diffraction efficiency if the optical path difference giving structure does not exist on the optical surface of the diffractive structure.

37. (Previously Presented) The optical pickup device of claim 36, wherein as compared with the diffractive structure when the optical path difference giving structure is not provided on the optical surface of the diffractive structure, the optical path difference giving structure lowers an absolute value of an optical phase difference between the L-th order

diffracted light of the light beam having the first wavelength $\lambda 1$ and the M-th order diffracted light of the light beam having the second wavelength $\lambda 2$ by changing a phase of at least one of the L-th order diffracted light of the light beam having the first wavelength $\lambda 1$ and the M-th order diffracted light of the light beam having the second wavelength $\lambda 2$, the L-th order diffracted light and the M-th order diffracted light being caused by the structure having the diffracting function.

38. (Previously Presented) The optical pickup device of claim 37, wherein one of the optical elements is an objective optical element, and the light beam having the first wavelength $\lambda 1$ and the light beam having the second wavelength $\lambda 2$ are respectively incident on the objective optical element as a diverging light beam, and the light beam having the first wavelength $\lambda 1$ and the light beam having the second wavelength $\lambda 2$ are converged on a prescribed optical information recording medium in a condition that spherical aberration and/or wave front aberration are corrected.

39. (Previously Presented) The optical pickup device of claim 37, wherein a magnification m of the objective optical element satisfies a formula:

$-0.295 \leq m \leq -0.049$.

40. (Previously Presented) The optical pickup device of claim 37, wherein information is reproduced and/or recorded for a third optical information recording medium having a protect substrate thickness t3 (t3>t2) by using a light beam having a third wavelength $\lambda 3$ ($\lambda 3 > \lambda 2$) emitted from a third light source.

41. (Previously Presented) The optical pickup device of claim 36, wherein the first wavelength $\lambda 1$ and the second wavelength $\lambda 2$ are a use reference wavelength.

42. (Previously Presented) The optical pickup device of claim 41, wherein the optical path difference giving structure gives an optical path difference to the diffracted light so that a -N-th order diffracted light of the light beam having the use reference wavelength $\lambda 1$ has a maximum diffraction efficiency and so that a (-N+1)-th order diffracted light of the light beam having the use reference wavelength $\lambda 2$ or a (-N-1)-th order diffracted light of the light beam having the use reference wavelength $\lambda 2$ has a maximum diffraction efficiency.

43. (Previously Presented) The optical pickup device of claim 42, wherein the light beam having the first wavelength $\lambda 1$ and the light beam having the second wavelength $\lambda 2$ are respectively incident on the objective optical element as a diverging light beam, and the light beam having the first wavelength $\lambda 1$ and the light beam having the second wavelength $\lambda 2$ are converged on a prescribed optical information recording medium in a condition that spherical aberration and/or wave front aberration are corrected.

44. (Previously Presented) The optical pickup device of claim 42, wherein a magnification m of the objective optical element satisfies a formula:

$-0.295 \leq m \leq -0.049$.

45. (Previously Presented The optical pickup device of claim 42, wherein information is reproduced and/or recorded for a third optical information recording medium having a protect substrate thickness t3 (t3>t2) by using a light beam having a third wavelength λ3 (λ3>λ2) emitted from a third light source.